

REMARKS

The claimed invention

As amended, claim 1 recites a microarray of polymeric biomaterials comprising a base comprising a substantially smooth cytophobic surface and a plurality of discrete dry polymeric biomaterial elements non-covalently bound to the cytophobic surface. Each of the polymeric biomaterial elements includes a soluble synthetic polymer, and at least two of the polymeric biomaterial elements include different soluble synthetic polymers. As amended claim 2 recites a microarray of polymeric biomaterials comprising a base comprising a substantially smooth cytophobic surface and a plurality of discrete dry non-monolayer polymeric biomaterial elements bound to the cytophobic surface. Each of the polymeric biomaterial elements includes a soluble synthetic polymer, and at least two of the polymeric biomaterial elements include different soluble synthetic polymers. The amendments to the claims are supported by the specification, for example, at page 5, line 27, which indicates that the base may be a modified slide or coverslip.

The prior art

Saltzman discloses microscope slides coated with a layer of a polymer including styrene or bisphenol A. The slides are coated with the polymer by spin-coating (p793).

Kapur discloses self-assembled monolayers that are patterned to have cell-binding sites (column 14, lines 10-39, Abstract).

Schultz discloses methods of producing arrays on a substrate. In one embodiment, the arrays are produced by “delivering solutions [of monomer] to each of 16 predefined regions on the substrate” (Example B, column 33, lines 30-31). The predefined regions may be set by disposing “a wall or other physical barrier” down on the substrate to “prevent the reactant components in the individual reaction regions from moving to adjacent reaction regions” (column 13, lines 36-39). In another embodiment, “a dimple or other recess can be used to prevent the reactant components in the individual reaction regions from moving to adjacent reaction regions” (column 13, lines 39-42).

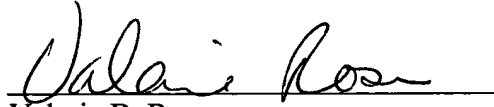
Rejections under 35 U.S.C. § 103

Claims 1-6, 8-11, 14-20, and 57 stand rejected under 35 U.S.C. 103 as being obvious over Saltzman in view of Kapur and Schultz. Applicant submits that the amendments to claims 1 and 2 overcome the rejection. Applicant submits that Kapur does not remedy the failure of Saltzman to disclose an array. Kapur discloses that a glass wafer is coated with a layer of an aminosilane. The use of aminosilanes and other silanes to form monolayers on a substrate through self-assembly has been well documented by Whitesides and others. These monolayers are covalently attached to the substrates which support them. The silane groups react with hydroxyl groups on the surface of the glass to form Si-O-Si linkages anchoring the silane to the glass substrate. Claim 1 recites that the polymer elements are non-covalently bound to the surface; claim 2 recites that the polymer elements are not monolayers. As a result, the combination of Kapur with Saltzman and Schultz cannot result in or suggest the subject matter of the claimed invention.

Applicant further submits that the combination of Schultz and Saltzman fails to suggest the subject matter of claims 1 and 2. Schultz discloses depositing monomers in predefined regions having dimensions of about 3mm x 3mm x 5mm (column 33, line19). That these regions have a volume indicates that they are not flat but defined by walls or dimples, as disclosed in column 13, lines 36-42. Schultz discloses that walls or dimples should be used to separate the reactant components in different regions on a substrate. For example, Figure 2 shows the use of a mask to deliver a reactant to a dimple in a substrate. In contrast, the instant claims recite that the polymer elements are disposed on a substantially smooth substrate, not one having a topology interrupted by barriers. The combination of Schultz and Saltzman fails to suggest a plurality of polymeric elements bound to a substantially smooth cytophobic surface, as recited by the claims. Applicant submits that claims 1-6, 8-11, 14-20, and 57 are patentable in view of Saltzman, Schultz, and Kapur, whether considered separately or in combination.

A Petition for Extension of Time and the appropriate fee are enclosed. Please charge any fees associated with this filing, or apply any credits, to our Deposit Account No. 03-1721.

Respectfully submitted,

A handwritten signature in cursive script, reading "Valarie B. Rosen", is written over a horizontal line.

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